

# **IDentification Notes**

## **for wildlife law enforcement**

CATEGORY: MAMMALS

*Scientific Name/s:*

*Common Name/s:*

### **ANNOTATED BIBLIOGRAPHY FOR MAMMAL BONE IDENTIFICATION**

The information in these references may help the wildlife law enforcement officer identify a mammal skull or postcranial element sufficiently for probable cause. Be aware that incomplete dentition, fragmentation, sexual dimorphism, and age at death of the unknown skull will affect the application of this information. Use the information contained in these references to determine probable cause. If any doubt as to the accuracy of an identification exists, call the Lab for assistance. Remember, a drawing or photo can never replace a comparative standard.

**Brown, C.L. and C.E. Gustafson (1979) A Key to Postcranial Skeletal Remains of Cattle/Bison, Elk, and Horse. Reports of Investigations, No. 57, Laboratory of Anthropology, Washington State Univ., Pullman.** [osteological comparison of each element in detail by anatomical portion]

**Burt, W.H. and R.P. Grossenheider (1952 [1990]) A Field Guide to the Mammals. Peterson Field Guide Series, Houghton Mifflin Co., New York.** [excellent dental formula chart; some skull photographs] ISBN: 0-395-24084-0

**Ellenberger, W. et al. (1949 [1956]) An Atlas of Animal Anatomy for Artists. Dover Publications, Inc., New York.** [anatomical nomenclature and superb drawings of several species in articulation]

**Gillbert, B. Miles (1980) Mammalian Osteology. Missouri Archaeological Society, Columbia.** (Library of Congress No. 80-84455) [comparative osteology, including line drawings of skulls and major skeletal elements] Privately published by MAS or direct from author: Box 807, Springerville, AZ 85938 as of 7/96

**Glass, Bryan P. (1981) A Key to the Skulls of North American Mammals, 2nd Ed. Dept. of Zoology, Oklahoma State Univ., Stillwater, OK.** [comprehensive key to genera; representative species are illustrated in multiple views, but small scale limits level of detail]

**Jones, J. Knox, Jr., and R.W. Manning (1992) Illustrated Key to Skulls of Genera of North American Land Mammals. Texas Tech Univ. Press, Lubbock, TX.** [has photographs of many skulls, as well as keys to each genus] ISBN: 0-89672-289-9

**Kent, George C. (1975) Systemic Dissections of Vertebrates: A Laboratory Guide.** The C.V. Mosby Co., St. Louis, MO. [textbook for college zoology courses; has diagrams of bird, rabbit, cat skulls and post-cranial elements] ISBN: 0-8016-2653-6

**Lawlor, T.E. (1979) Handbook to the Orders and Families of Living Mammals.** Mad River Press, Eureka, CA. [global in scope, but limited to familial level or higher; skulls of representative genera are shown in three views] ISBN: 0-916422-16-X

**Olsen, Stanley J. (1964) Mammal Remains from Archaeological Sites, Part 1.** Papers of the Peabody Museum of Archaeology and Ethnology, Vol. 56, No. 1, Harvard Univ., Cambridge, MA. [has diagrams of skulls and each major bone in comparative format] ISBN: 0-87365-162-6

**Roest, Aryan I. (1991) A Key-guide to Mammal Skulls and Lower Jaws.** Mad River Press, Inc., Rt.2, Box 151-B, Eureka, CA 95501. [excellent key for North American mammals.. Author claims it to be "nontechnical for beginners," but it is quite good; includes most domestic and wild western mammals although not all are illustrated] ISBN: 0-916422-71-2

**Schmid, Elizabeth (1972) Atlas of Animal Bones.** Elsevier Publishing Co., Amsterdam/New York. [like others, shows major bones of mammals and some birds separately in comparative format; larger libraries may have a copy] ISBN: 0-444-40831-2

Note: There are no comprehensive keys or atlases in English for skulls of non-North American mammals at the species or sub-species levels. Glass (1981) includes a few African bovids. There are other, fine publications that deal with osteology for a single species or genus; their exclusion here reflects only the limited scope of this bibliography.



*Zalophus californianus*, old male